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ABSTRACT

One theoretical model for understanding the visual event suggests that a visual event has both a surface (descriptive) and a deeper (experience) level of understanding. Both levels are needed to comprehend and appreciate images, with each level affecting the other. A person's perspective is an important part of the visual event, which depends upon personal background, the actual visual event experience (amount of involvement, sensations, effects), and the reflection afterward. Perception of structure and elements also influences and is influenced by the individual's background, the experience of the "seeing," and the reflection upon that "seeing" experience. This model is still incomplete, and the necessary supportive empirical evidence may be difficult to obtain until more is known from research efforts in related fields. Students should be taught that seeing a visual event is more than a data collection process. By using mental images, exploring intuition, and examining their visual perceptions, students can find a deeper level of understanding as a basis for concept formation and thought. This paper includes 50 references. (Author/LMM)

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A THEORETICAL MODEL FOR UNDERSTANDING
THE VISUAL EVENT

by

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A THEORETICAL MODEL FOR UNDERSTANDING THE VISUAL EVENT

Introduction

Educators practice theory consciously or unconsciously and often formulate and generate theory from practice, refine theory by research and give theory credibility through both practice and research. In like manner, I present here the theoretical model for understanding the visual event as a proposition to be tried, questioned, researched and refined. Since visual events are everywhere in our lives, it is not surprising that there has been much research on visualization, mental imagery, dual coding, visual learning, visual literacy and visual-based instruction. However, the concept of the visual event, whether it be external or internal, has been elusive. Perhaps this is so because of certain research traditions.

Traditionally, theory building requires the researcher to test propositions and hypotheses by observation, examination, and measurement, but human behavior is not as easy to measure or categorize as, for instance, the properties of a given chemical. How, when, where, why and what we learn involves inner mental processes that remain difficult to catalogue and explain. Though the brain and computer analogy is often made by behaviorists, instructional designers, and educators to explain the learning process, I cannot accept this analogy. Learning is more than a process of collecting data, and while the computer has two distinct systems, hardware and software, the mind does not. The hardware components of a computer have specified functions and can be replaced when they wear out, but thus far we have not been able to do this with the brain. The software of the computer, which can be modified by man or another computer, tells the computer what to do.

Harth (1982) wrote that the living brain has no such instructor:

The brain does not follow instructions, it simply functions. Nietzsche remarked that 'a thought comes when it wills, not when I will.' Memory, motivation, associations - all the changes which in a computer would require instructions occur in the brain as a result of changes in the structure itself - the hardware. (p. 232)

In the brain, the structure or system (which is the brain itself) undergoes continuous physical changes, interacts with itself, and has its information residing within itself. The system is thus organic rather than mechanical.

Just as we cannot say that the brain corresponds completely to the computer, we cannot, at least at this point in our knowledge, require that theories of human learning and their practice conform completely to the scientific method. Educators would feel more comfortable and secure if they could prove all learning theory by empirical research, but the empirical proof may not be possible.

The ultimate question that has to be asked by educators is how much does traditional empirical research contribute to the advancement of knowledge on learning? The "bales of published research" (Goodman, 1962, p. 225) have satisfied administrators, professors and researchers, but how much do we know about how we learn and think? Sometimes strict adherence to empirical research for theories in education may have a stifling effect on innovation and practice. Although the model presented here is far from complete, the empirical evidence necessary for its support and credibility may be too difficult to obtain until we know more about how we think through psychological and neurophysiological research.

The model of the visual event consists of the surface level, which includes perspective and structure and elements, and the deeper level, which is the experience of truly "seeing."

Visual Event

Images arouse interest, motivate us to action, trigger emotion, and help us to recall past experiences. We can learn to read or understand visual language through the study of the visual event - its elements, structure, syntax, and subtleties. Through images we see meanings, metaphors, analogies, categories, qualities, and interpretations. If we are visually literate, we are able to understand (read) these visual events and get meaning and pleasure from them. Also, we can use visual events to convey our own messages, thoughts and feelings.

Advertisers are adept at manipulating us with images. Key (1976) wrote about the hidden implants of images in America's mass media and how these images program and condition our subconscious minds.

Many political groups have been able to use images to control and manipulate people through mass rallies, pageantry, and visual symbols. Obviously, we must guard against these visual and verbal manipulations. Effective education means that we can understand, use and appreciate the wealth of visual information that is available to us: we must become literate in the use of visual information and the images we see and create in our own minds.

The visual event occurs not only as a result of stimuli in the external world, but there are also visual events or images created by our own minds. Psychologists and researchers such as Bry (1978), Paivio (1969, 1971, 1975), McKim (1972), Patten (1973), Haber (1968, 1969,

1970), Hagen (1974), Winn (1980) and Fleming (1977) have been concerned with these mental images. In fact, Samson (1965) said, "We must first realize that 'things' exist not in the 'outside world' but in the mind" (p. 28). We do interpret waves of sensation from stimuli of the outside world, but we also invent our own stimuli within our minds through daydreams, mental imagery, imagination, and visualization (Watkins, 1976; Singer & Switzer 1980; Lazarus, 1977; Singer, 1966; Winn, 1980; Hortin 1981a, 1981b, 1982).

Visualization or mental imagery offers individuals creative ways of preparing for the future and for problem solving (Hortin & Bailey, in press). Visual rehearsal of future events in one's mind is a strategy for coping with change or the experiences of new technology. Suppose, for example, a school decides to purchase microcomputers for its mathematics program. The adoption of this new curriculum could be visually rehearsed by the members of the curriculum committee to anticipate problems, advantages, disadvantages, consequences, choices, and strategies.

Another example of visualization in education would be to have students mentally rehearse the process and sequence of performing some psychomotor skill before they actually perform the skill. In a shop class a student might visually rehearse the steps to working on a wood lathe before he performs the task.

I believe that understanding the visual event involves (1) the description of the visual event and (2) the experience of the viewer before, during and after the event. The description involves the viewer's examination of the visual event from different perspectives and the awareness of the structure and elements of the visual event.

Perspective

Perspective in this model refers to the conditions that affect point of view of the visual event. Such conditions include time, space, assumptions and objective/subjective continuum. An event manifests itself depending upon one's time and space conditions. When one "sees" and where one "sees" the event affects his perspective. A popular television show, "The Twilight Zone," presented story after story about confused characters who were out of step with reality because of changes in their time and space conditions.

Another old television show, "You Are There," "interviewed" people (some of them famous) on the scene at major historical events and thus played upon the television viewer's distanced perspective. Transporting oneself to a different time or space opens up different perspectives, brings new knowledge, and is a possible step toward alternative, creative thinking or intuitive wisdom (Quick, 1981).

There are many ways the classroom teacher can offer experiences in changing point of view. Ambrose Bierce's short story "An Occurrence at Owl Creek Bridge" and the excellent film made of that story are good examples of changing time and space conditions and thus changing perspective.

Getting students to understand this concept of time and space in its relationship to mass media is critical and fundamental if our society is to remain free from images that have the potential to manipulate us.

Other conditions of the perspective are assumptions and an objective/subjective continuum. A teacher might, for instance, compare the flow of information via mass communications about three wars: World

War II, Korea, and Vietnam. The conditions for viewing these wars were and are very different. A war in Europe in the 1940s is perceived with a certain objectivity or subjectivity that differs from the Vietnam War not only because of the greater time distance but also by virtue of the symbol systems and technology used to present the visual events. The 1940s American citizen received news of the war from newspapers and newsreels. In some respects film footage from the 1940s with its black and white, grainy film and documentary style seems more real to us now and more acceptable than the small screen, clearer, color television news clips of Vietnam that we watched every night. Admittedly, the differences in the conditions surrounding the two wars play a part in our perspective, but also the symbol system and technology affect the objective/subjective condition of our perspective and the assumptions about the veracity of those visual events. The images of the Vietnam War made us shocked, incredulous, questioning, angry and tired. World War II visual events caused the same range of emotions, but the images did not become as overwhelming and finally numbing because the mass media technology was not as advanced.

Structure and Elements

Another aspect to the descriptive level is that of structure and elements. Writers from art philosophers such as Arnheim (1967, 1969) and Eisner (1972) to symbol systems and communications experts such as Goodman (1968), Olson (1974), Gardner, Howard and Perkins (1974) and Salomon (1979) have written much on structure and elements. Arnheim (1969) wrote:

The visual medium is so enormously superior because it offers

structural equivalents to all characteristics of objects, events, relations. The variety of available visual shapes is as great as that of possible speech sounds, but what matters is that they can be organized according to readily definable patterns, of which the geometrical shapes are the most tangible illustration. The principal virtue of the visual medium is that of representing shapes in two-dimensional and three-dimensional space, as compared with the one-dimensional sequence of verbal language. This polydimensional space not only yields good thought models of physical objects or events, it also represents isomorphically the dimensions needed for theoretical reasoning. (p. 232)

Reading visual events involves an understanding of their structure and elements. The quintessential study of structure and elements for teachers can be found in the feature film. For example, color, direction of light, illumination, movement of people and objects within a frame, placement of people within a frame, and sequence of frames are used in cinematography to produce certain meanings on the screen. These are the elements that describe a visual event which affect our experience and hence our understanding. Ingmar Bergman's film, "The Seventh Seal," an allegory of the Middle Ages, presented the viewer with variations of light and subtle gradations of tone from black to white (Bobker, 1979. p. 55). The use of these tones gave the film a mood of foreboding, mystery, darkness and despair. The deeper structure of the film was thus realized not only from the characters, plot and acting (subject content), but from the dark images and mood created by the lighting elements. Roman Polanski used the elements of lighting and color tones (brown, yellow and gold) to duplicate the lighting of the 1930s in his film Chinatown, the 1930s being the time which the story occurs (Bobker, 1979, p. 80). In Round for Glory, Hal Ashby and his cinematographer, Haskell Wexler, captured the imagery of the Depression years through control of color and film grain (Bobker, 1979, p. 76). The dusty look in the film makes the viewer to believe he is seeing the

Dust Bowl of the 1930s. Sequence of shots, composition, color, angle, and lighting all immerse us viewers in the symbol system medium so that we no longer just see the visual event; we live it; we experience the visual event. All of this depends on whether the director, actors, cameramen and editors are successful in handling structure and elements of the visual event.

The Experience

The experience of the visual event is on three levels. The first level might be called "before-the-event" and this level is based on the background and previous experiences of the viewer. Paul Wendt (1962) said, "The meanings of pictures are not in the pictures themselves, but rather in what we bring to the pictures." The second level is the "straightforward experience" (Ihde, 1979, p. 45) or the event/experience as it happens. An individual experiences a visual event and becomes involved with it; he attends to the experience; the experience is real. The third level is thinking about the experience or reflection on the visual event.

A model for the visual event is provided in Figure 1. The premise is that a visual event has two levels of understanding: the surface (descriptive) level and the deeper (experience) level. Both levels are needed to comprehend and appreciate images and each level affects the other. A person's perspective or point of view is an important part of the visual event, and perspective depends upon the background of the person, the actual experience of the visual event in terms of amount of involvement, sensations, effects, etc., and the reflections afterward. Structure and elements also influence and are influenced by background,

the actual experience and the reflection upon that experience.

Salomon and Cohen (1976) theorized that coded messages are never a raw message, but represent a format as well as content. The code used biases the information. Handling of coded messages has two requirements: "The activation of mental skills relevant to the psychological requirements of the representational format used in the message, and the acquisition of the knowledge entailed in the message" (Salomon & Cohen, 1976, p. 6). Some ability is needed to handle the code of the information, whether it is verbal mediation or visual mediation. A strategy or training for understanding the experience of the visual event is a possible solution to handling some coded information. One direction for empirical research in this area might be to continue the memory and dual coding research conducted by Paivio (1971) and Canelos (1980).

Paivio (1971) reported on some memory experiments comparing pictures (imagery), abstract words and concrete words and found "imagery-concreteness" a better predictor of memory performance than abstract words (p. 242). "The number of items correctly remembered in such tasks uniformly increases from abstract words, to concrete words, to pictures" (Paivio, 1971, p. 242). Paivio's (1971) research supports the view that either images or words, or both, serve as memory codes for remembering items effectively.

Paivio (1971) explained that dual coding aids in recall because items are stored in both the verbal and nonverbal code, or at least the items are experienced in both forms of coding (p. 207). Words are not only read or heard, but evoke referent images. For instance, if the subject knows that verbal recall will be required in an experiment, the

subject may verbally label pictures (Paivio, 1971, p. 207). "The increased availability of both codes increases the probability of item recall because the response can be retrieved from either code--one code could be forgotten during the retention interval, but verbal recall would still be possible provided that the other is retained" (Paivio, 1971, pp. 207-208). Such research linked with introspective approaches (Hortin, in press) to the visual event experience could have important implications for understanding imagery processes.

Canelos (1980) conducted research on three types of strategies dealing with visualization and their effect on learning. The first type of strategy was called Copy Strategy which "required the subject to form a mental image of the perceived visual stimuli information" (Canelos, 1980, p. 17). The second was called Relational Strategy, which involved coding information in visual and verbal modes. Canelos (1980) also used the "peg-mnemonic system, a memory technique used to facilitate memory and recall" (p. 17). Ausubel (1966) provides the theoretical basis for the peg-mnemonic system. "The Hierarchical Strategy employs the processing advantages of both imagery mediation and the peg-mnemonic system" (Canelos, 1980, p. 17). The Hierarchical Strategy allows the learner to store the information logically. Canelos (1980) defined the Hierarchy Strategy:

Hierarchy--the formation of a cognitive or mental hierarchy means that information is stored in a structured network. Inclusive information will form nodes with related information subsumed under each node. All the information will interrelate. (p. 18)

Canelos (1980) found that the "Hierarchical Strategy generally facilitated learning significantly better than the Relational Strategy or the Copy Strategy" (p. 18). In the study, retention was also

considered and after one week, Canelos (1980) found that the Hierarchical Strategy had "little loss of acquired information" (p. 19). Related mnemonic and image memory studies include those of Hadamard (1945), Whorf (1956), Pressley (1976), Paivio (1975), Bower (1972), Collins and Quillian (1972) and Fleming (1977).

Fleming (1977) wrote:

In sum, I assert that the way in which pictorial stimuli influence thought and memory processes is becoming an increasingly pivotal issue in the media field. It is also becoming a research and theory issue in other fields of education such as reading, cognitive development, special education, and vocational education. It may be necessary to generate new learning theories, new ways of thinking about learning, in order to explain and understand the memory effects of picture. (pp. 48-49)

In summary, there is a connection between the description and experience of the visual event. Perception involves the active processing of information by the perceiver in response to stimulus (Murch, 1973). Turbayne (1970), Taylor (1960), Dondis (1974), Gregory (1970) and others agree that an important aspect of perceptual development is the understanding of visual structure and elements that make up the visual event. Visual imagery and symbolic systems are thought to be means to visual thinking (Fleming, 1977; Salomon, 1979; Majure, 1976; Arnheim, 1967, 1969; Paivio, 1969, 1971; Samples, 1976; Bry, 1978; Hortin, 1981a, 1981b, 1982; Hortin & Bailey, in press).

Teaching students to be cognizant of the experience of the visual event involves sharing mental strategies that use mental imagery, visualization, mnemonics, dual coding and symbolic systems to store information, interpret and develop new ideas, and solve problems. We need to take another step in the development of creative thinking by including the research and theories on strategies and methods for

understanding the visual event and thinking visually. With this step, the visual event becomes not just an external reality perceived by the learner, but a means to creating his own visual events in the mind.

Description

1. Perspective
Time
Space
Assumptions
Objective/Subjective Continuum
2. Structure and Elements
Features
Classification
Quality
Operation Analysis (changes)
Analogy
Metaphor
Movement

Experience

1. Background
History
Knowledge
Sociological aspects
Psychological aspects
Economical aspects
Intelligence
2. Straightforward Experiences
Character
Involvement
Reality
Sensation
Effect
3. Reflection
Thinking about the
Visual Event

Figure 1. Model for Understanding the Visual Event

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ABSTRACT

This paper provides a theoretical model for understanding the visual event. The premise is that a visual event has two levels of understanding: the surface (descriptive) level and the deeper (experience) level. A person needs both levels to comprehend and appreciate images, and each level affects the other. A person's perspective or point of view is an important part of the visual event; the perspective depends upon the background of the person, the actual experience of the visual event in terms of amount of involvement, sensations, effects, etc., and the reflection afterward. What an individual perceives in terms of structure and elements also influences and is influenced by the background of the individual, the experience of the "seeing," and the reflection upon that "seeing" experience. The model presented here is far from complete and the empirical evidence necessary for its support may well be too difficult to obtain until we know more from other research efforts in psychiatry, neurophysiology, brain chemistry, visualization and emotional/cognitive structure about how man thinks.

It is important to teach students that knowing and seeing involve these two levels of understanding and that seeing a visual event is more than a process of collecting data. By using mental images, exploring intuition and examining their visual perceptions, students can find a deeper level of understanding that lays the groundwork for concept formation and thinking. We need to take another step in the development of creative thinking by including practices, research and theory on strategies for understanding the visual event and thinking visually.

With this step, the visual event becomes not just an external reality perceived by the learner, but a means to creating his own visual events in the mind.